

Abstract of the Disclosure

In code division multiple access communications wherein a plurality of data streams carrying a plurality of transmit symbols are spread by a plurality of assigned spread code, the data streams are divided into a plurality of data blocks and a plurality of prefixes in symbol-level are added to the data blocks prior to the data streams being spread and combined for transmission. At the receive side, the prefixes are removed from the received data stream in the time domain and the prefix-removed data stream is converted into a transformed signal in the frequency domain. A feed-forward filter is used to implement a joint equalization and despreading operation by element-by-element multiplications in frequency domain. A feedback filter is used to remove the inter-symbol interference and update the feed-forward filter through a feedback loop.